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Food and non-food retail change in a post-communist country: A case study of the Gemer region in Slovakia

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Abstract. The retailing sector seems to be rather sensitive to social and economic developments in a society. In contrast to global retail network trends, specific processes may be observed in some lagging regions in post-communist countries. In the article attention is paid to spatial changes in food and non-food retailing locations in the region of Gemer, one of the least developed regions of post-communist Slovakia. The retailing network transformation between 1996 and 2012 was measured by applying retail capacity calculations for surplus or deficit, related to the population size of municipalities within the region. In the article, we examine food and non-food retail locations in the Gemer region with a special focus on spatial changes (urban vs rural) as well as temporal and trends based on retail capacity growth indices. In conclusion, the findings suggest that rural food and non-food retailing businesses have gone through considerable change and that it is not in harmony with the globalisation processes visible in the urban environment. Specifically, retail capacities (both food and nonfood) in the Gemer region are witnessing a period of growth.

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1. Introduction

Slovakia's economy has witnessed considerable change since 1989. Throughout the last 25 years the transformation has brought observable effects in all economic sectors of post-communist countries (see Kolodko, 2000; Švejnar, 2002; Benáček, 2006; Kornai, 2006; Némethová et al., 2014). The Eastern-European retail sector has undergone a major transformation hand in hand with globalization (Myers, Alexander, 1996; Kulle, 1997; Alexander, Myers, 2000; Spilková, 2008) while Slovakia's retail sector has gone through rapid changes significantly visible in both time and space as well (Drtina, 1995; Mitríková, 2008; Trembošová, 2012). Except for the general transformation manifested through changes to entrepreneurial structure in time and space (described in Bilková, Križan, 2013), retail networks in post-communist societies are increasingly exposed to globalization trends (for more, see Krásny, 1992; Michalak, 2001; Nagy, 2001; Wilk, 2006; Spilková, Perlín, 2013. This has brought a deep shift in consumer behaviour (Križan et al., 2009; Spilková, 2012; Kunc et al., 2013) needing to adjust to recent changes in the territorial distribution of retail networks (Očovský, 1974; Dries et al., 2004), and vice versa.

The retailing sector's concentration in urban centres has been strengthened by a shift towards a free-trade economy (Kunc et al., 2012). The location and concentration of services depends on a hierarchy of cities or regional centres while the availability of both basic services (including retailing) and infrastructure is one of the most important issues discussed in urban geography (Halás, Zuskáčová, 2013). The rural environment might be considered as a hinterland to this concentration and has been subject to permanent change (Ptáček, Szczyrba, 2007; Wilk, 2013). Today, large and sophisticated retail chains can stock and sell more products than ever before in large-scale stores that are becoming the industry norm. Although there are clear problems faced by small retailers in this new retail environment, many of these changes have been beneficial for consumers (Vias, 2004). On the other hand, rural retailers are disadvantaged due to geographic isolation, unfavourable cost structures and restricted population catchments (Paddison, Calderwood, 2007).

Even though the post-communist rural environment has witnessed deconcentration trends in the services sector (Szczyrba et al., 2013; Wilk, 2013; Maryáš et al., 2014), retailing can be still considered an elementary and necessary component of commercial services in the rural environment (Szczyrba, 2000; Clarke, Banga, 2010). The retailing sector has strong links to standards of living and the wider human environment and represents businesses providing everyday services for residents, thus a lack of retail facilities may heavily impact on the quality of life (Jones, Simmons, 1990). A specific role is attributed to the food-retail sector, generating a so-called 'food environment' which is often regarded as a critical determinant of community and population health (Glanz et al., 2005). As Engler-Stringer et al. (2014: 5) suggest, "the food environment can be broadly conceptualized to include any opportunity to obtain food". This definition of the 'food environment' may include physical, sociocultural, economic and policy factors at both micro- and macro-levels (Kirk et al., 2010).

New spatial distribution patterns (i.e. new locations of retail units and the enhancement of existing units, along with the emergence of new modern large-scale retail formats such as supermarkets, hypermarkets and shopping malls) reflecting the growing numbers of motorized customers on the one hand but lacking effective legal regulation on on the other, might possibly lead to the creation of vast areas with poor or limited accessibility to adequate and healthy food. Such areas are often defined as 'food deserts'. The definitions and methods of identification of 'food deserts' vary as a consequence of ambiguity in their perception (Shaw, 2006; Jiao et al., 2012). Based on this, various definitions can be found in the academic literature, as the issue of food deserts has become increasingly a subject of academic research (Walker et al., 2010). Guy and David (2004) claim that among their principal attributes, disadvantaged geographical location caused by a poor choice of food retail chains is key. This is the focus of this study.

In the article, we examine food and non-food retail locations in the Gemer region with a special focus on temporal (from 1996 to 2006) as well as on spatial changes and trends (urban vs rural environments) based on retail capacity growth indices. The article has the following four research questions:

RQ1: A recent concentration of both food and non-food retailing is anticipated in the rural environment of the researched region.

RQ2: Food retail capacity in its rural environment has recently decreased.

RQ3: Food retail deconcentration is expected in the urban environment, leading to overcapacity of food-retail facilities in the urban hinterland.

RQ4: The region's rural environment is dominated by rural communities with deficient food retail capacity.

First the article will describe the researched region, with identification of the principal economic and social issues recently observed. Then the methods applied in the analysis and data collection will be introduced. The third and fourth sections follow from this, however the third focuses on food retail, while the fourth on non-food retail.

2. Methods and data collection

Analytical approaches to research into the retail sector and its transformation can be viewed from different perspectives (Birkin et al., 2002; Guy, 2006). A straightforward growth index is applied in the article describing the development of the number of retail units in both the initial and final years of the surveyed period. If the relationship between population and retail capacity is examined, then urban and rural communities can be divided into two basic groups. The first represents those with above-average retail concentrations compared to their population. Therefore, they are considered to have a 'retail capacity surplus'. By analogy, those with 'retail capacity deficits' can be identified (cf. Očovský, 1976), too. Quantification of surpluses or deficits can be carried out for each community by calculating a theoretical number of retail units (S_{Ti}) based on population (Bilková, Križan, 2013):

$$S_{Ti} = P_i \cdot S$$

where P_i represents population size in a town, and i and S the average number of retail units in all communities in Slovakia. Comparison between real and theoretical numbers of retail units enables an assessment of a surplus or deficit of retail capacity in a community.

Application of the retail capacity surplus concentration index (I_k) represents a slightly different approach to retail capacity, as follows:

$$I_k = \frac{S_i - P_i \frac{S}{P}}{S_i \cdot 100}$$

where S_i represents the number of retail units in community i, S is the number of retail units in all Slovakia. By analogy, P_i is the population of town i, and P the number of residents in all Slovakia's communities. The values of I_k were calculated for 1996 and 2012, respectively.

These indices quantifying the selected retail network were calculated for food retail stores, supermarkets and general merchandise stores as well as non-food stores.

GIS is often considered an appropriate tool to handle the issue of retail unit location (see Birkin et al., 1996; Roig-Tierno et al., 2013; Murad, 2014). In the article, two basic techniques were applied: location analysis and variable attribute analysis (Goodchild et al., 1992). The first approach includes a territorial analysis of regional food and non-food stores within a region, covering both identification and the spatial mapping of retail units. The second approach focuses on a spatial variability analysis of variable attribute values. Cartographic visualisation was made with the assistance of cartograms and figural signs on an ArcMap 10.1 environment developed by Esri.

A database covering distribution of food stores was acquired from the Statistical Office of the Slovak Republic. The database was processed for every community within the region to quantify indices for food and non-food retail units. In the next step, the data was geocoded to assign their geographical position.

3. Study area introduction

In our article, the Gemer region is identical with the following three districts (NUTS4 units): Rožňava, Revúca and Rimavská Sobota (see Fig. 1). Table 1 shows selected socio-economic attributes of the districts forming the study area. The whole region lies in the south of central Slovakia and borders on Hungary.

In the history of Slovakia, the Gemer region was one of the most important industrial territories of the former Austro-Hungarian Empire (see Finka et al., 2005; Zubriczký, 2011). Nevertheless, the period of post-communist transformation brought significant economic and social problems (Smith, 1996, 1998; Buček, 1999; Horňák, Rochovská, 2014; Rochovská et al., 2015) leading to considerable stagnation and a severe decline in some of the crucial social and economic indicators (Banerjee, Jarmuzek, 2010; Švecová, Rajčáková, 2013), accompanied by increasing unemployment especially affecting ethnic minorities (Bleha et al., 2014, Rusnáková, Rochovská, 2014, Máliková, Klobučník, 2017). Neither did EU-funded projects succeed in bringing a positive change to its development (Kluvánková-Oravská, 2004).

Accessibility to the region is poor and transport infrastructure is underdeveloped. For many decades, it has been omitted from large infrastructure investments which was criticised even in the communist era (Bašovský, 1987). The mountainous topography as well as lagging urbanization have contributed to general transport underdevelopment. The post-communist period brought further reductions in public transport capacity (see Horňák, Tóth, 2013), a considerable part of the passenger rail network has been closed and regional bus services reduced. Like many other sparsely populated rural regions, the public transport networks in Gemer seem to have followed a 'vicious circle' (see e.g. Nutley, 1998, later described in post-communist rural regions by Boruta, Ivan, 2010; Marada et al., 2010 or Seidenglanz, 2010), with decreasing public transport capacity leading to a growing general unattractiveness of public transport, and then individual mobility becoming increasingly related to passenger car accessibility. With the decay of retail networks in rural areas of the Gemer region and decreasing public transport, the region's rural population is clearly becoming dependent on the passenger car as a universal vehicle of mobility (Horňák, Rochovská, 2014) and a key element to access the retail network. Finally, the agricultural sector lost its ef-

Fig. 1. Location of the study area
Source: Authors' elaboration

Table 1. Basic socio-economic information on the Gemer region

District	Population (2013)	Total number of communities/communities with 200 or less residents (2013)	Urbanisation rate (%)	Unemployment rate (%, as of December 2013)
Rožňava	63 179	62/11	39.9	24.8
Revúca	40 326	42/13	57.8	29.6
Rimavská Sobota	84 837	107/30	42.8	31.2
Gemer - total	188 342	211/54	45.0	-

Source: Own elaboration on the basis of data derived from the Statistical Office of the Slovak Republic

fectiveness after the collapse of the communist regime. Even before 1989, communist state policy had led to weakening of family farming as a source of home produced food. Generally, as in mountainous regions elsewhere in Europe (see e.g. MacDonald et al., 2000 or Penz, 2011), Gemer has been witnessing a decline of farming as a traditional source of domestic food over a long period (Némethová, Civáň, 2017).

4. Food retail changes in the surveyed region

In this article, food retailing is represented by food stores, supermarkets and general merchandise stores registered by the Statistical Office of the Slovak Republic under category U08010 within the Municipal Database statistics.

In 1996, there were 111 municipalities (52.6% of the total) with no food store in the Gemer region (see Fig. 2), which is relatively high compared to Slovakia's average (46%, see Križan, Bilková, 2014). A somewhat disproportionate retail units' distribution across the region has its roots in a specific demographic structure, low purchasing power and the concentration of the regional retail network in regional urban and larger rural centres (such as Plešivec, Klenovec, Štítnik and Krásnohorské Podhradie). By 2012, number of municipalities with no retail units had dropped to 22 (10.4% of the region's total). Rural communities with no food retail units can be considered as 'food deserts' and specifically, Gemer ranks among those regions with high concentrations of them (Bilková, Križan, 2015; Bilková et al., 2017).

Generally, food-retail capacity development has been positive. The number of municipalities with (at least) one food store has more than doubled.

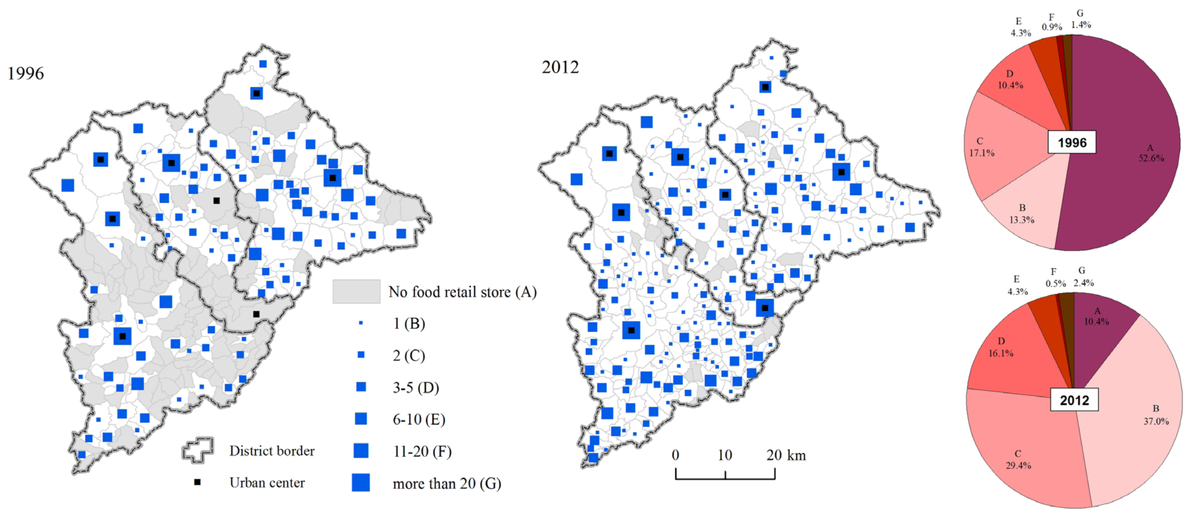

Fig. 2. Food stores in the Gemer region (in 1996 and 2012)
Source: Own elaboration on the basis of data derived from the Statistical Office of the Slovak Republic

This trend can be perceived as highly positive and, in terms of the general trajectory, it represents a belated atomisation phase, with no clear hints of concentration. Certain such trends may be observed in administrative centres where the number of food-retail units has declined. A spatial mosaic has changed into a more compact one with a more proportional territorial distribution.

The concentration index calculation has identified three basic types of municipalities. In 1996, there were five retail-deficit municipalities (including Hnúšťa, an urban centre), most of which are located in the district of Rimavská Sobota, while there were no such municipalities in Rožňava district (see Fig. 3). On the other hand, retail-surplus municipalities made up 45% of the total (including five urban centres). This category included larger municipalities, often located in the hinterland of larger towns. In 1996, municipalities with no retail units were the most frequent category (52.6%), primarily concentrated in the district of Rimavská Sobota. In the following period, this category witnessed the most significant modification. The number of municipalities with no food stores decreased to only 22 until 2012 (while there had been 111 in 1996) while the number of retail-surplus municipalities increased by 66, mostly in locations where no retail store was registered in 1996, or in municipalities with a small population. The number of retail-deficit municipalities (including four urban centres) recorded a nearly sixfold growth. These included four urban municipalities.

5. Non-food retail changes in the surveyed region

Correspondingly, non-food retail data were obtained from the Statistical Office of the Slovak Republic. The non-food retail database is represented by stores, supermarkets and general merchandise stores registered by the Statistical Office of the Slovak Republic under category U08050 within the Municipal Database statistics.

Compared to the food-store network, non-food retail units are more concentrated in the region (see Fig. 4). Non-food stores are usually located in larger municipalities, which serve as points of local trade and services for their hinterlands. Therefore, most non-food stores have been located in urban centres. In both surveyed years (1996 and 2012), the proportion of districts without a non-food store was high (77.7 and 82.0%, respectively), either in the shadow of local urban centres or in remote locations where running a non-food retail business would be unprofitable. In most locations, the number of non-food stores had decreased by 2012, with

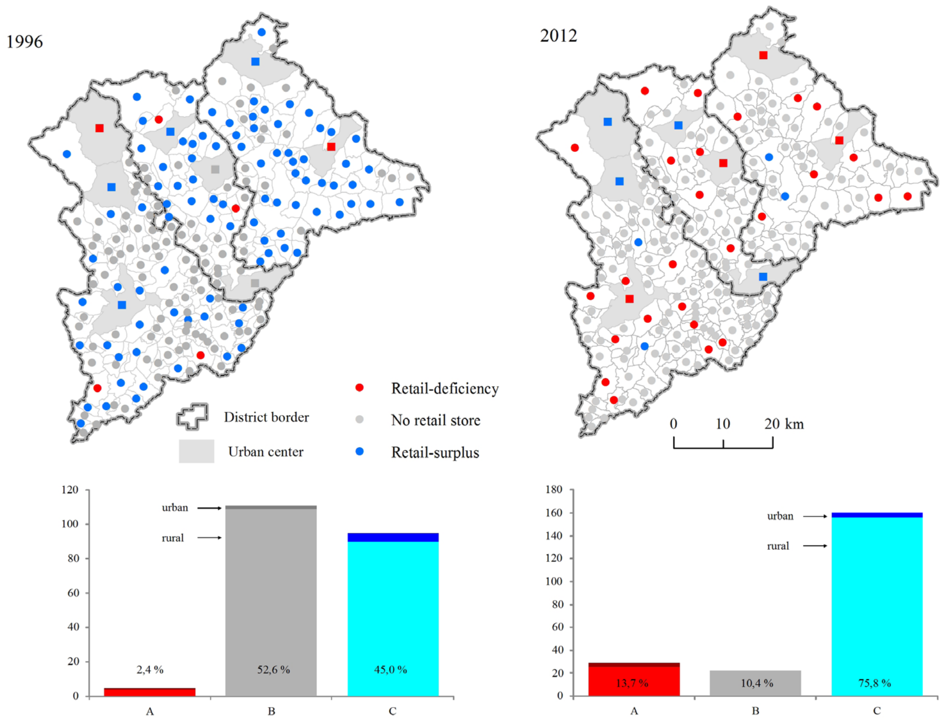

Fig. 3. Food-store network in the region of Gemer (in 1996 and 2012)
Source: Own elaboration on the basis of data derived from the Statistical Office of the Slovak Republic

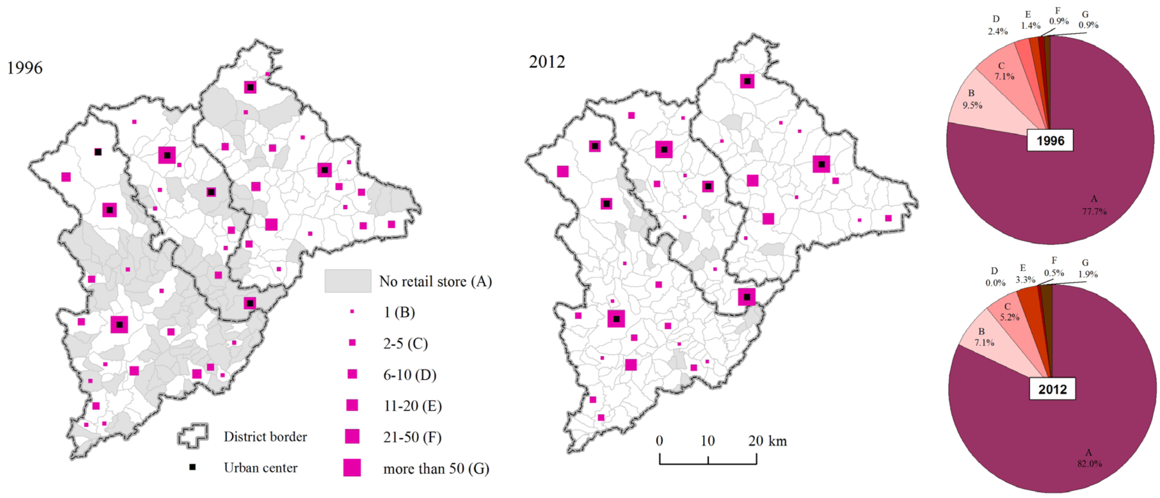

Fig. 4. Non-food stores in the region of Gemer (in 1996 and 2012)
Source: Own elaboration on the basis of data derived from the Statistical Office of the Slovak Republic

the exception of urban centres, indicating the emergence of a slow concentration trend.

Concerning the nature of non-food consumer goods and the concentration trend of non-food stores, we can point to several distinctive trends. First, a decreasing number of retail-deficit municipalities (see Fig. 5) has been found, albeit the decrease between 1996 and 2012 was very small in absolute numbers (only two rural municipalities and three towns). A small growth was found in the number of retail-surplus municipalities (five rural municipalities and one town) but only in the central and eastern parts of the region. On the contrary, the eastern part (Rožňava district) seems to be rather deficient, which proved to be true in both years surveyed. This trend goes hand in hand with a growing dependence of local residents on the passenger car as a basic tool to travel the growing distance to centres offering services and labour opportunities (see, for example, Horňák, Rochovská, 2014).

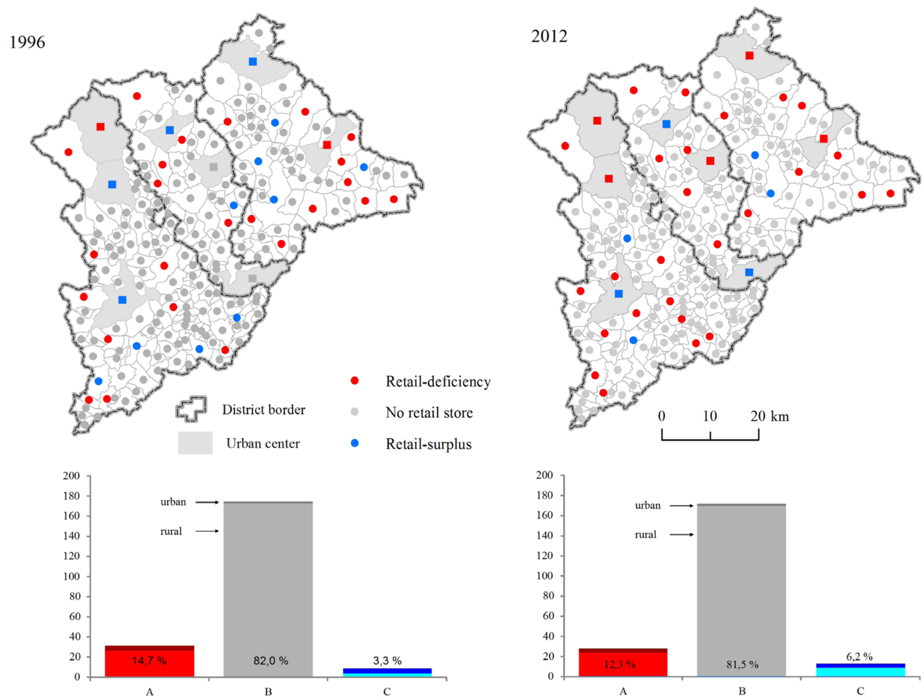

Fig. 5. Non-food-store network in the region of Gemer (in 1996 and 2012)
Source: Own elaboration on the basis of data derived from the Statistical Office of the Slovak Republic

6. Discussion and conclusion

Within the last few years, a further shift has been observable as services are no longer conceived as an end in themselves, but are increasingly considered an engine for wider societal transformations (Sangiorgi, 2011). The retail sector is one of the most rapidly transformed economic sectors in post-communist societies (Križan et al., 2016).

There is no institutional retailing regulation in Slovakia. In the communist period, the centrally planned system generated central rural communities where retail units were concentrated to serve neighbouring rural communities (see Očovský 1976). Thereafter, the retail sector transformation has led to substantial changes in retail network distribution nationally. Some communities can be described as food deserts (see Bilková, Križan, 2014) whose residents have developed various strategies of access to basic food, for instance, food shopping is often assisted by family members owning cars, while residents generate long-term stores or produce their own (Bilková et al., 2017).

General trends in retail network distribution show some surprising features compared to global trends. The specific conditions in Gemer with its low urbanisation rate, predominantly rural society distributed in small-sized (in terms of population), ageing municipalities and handicaped by low economic performance, low wages and high unemployment, generates a specific environment, with specific consumer demands and accessibility requirements. With respect to the research questions, the general findings are as follows:

RQ1: Globally, rural environments are witnessing a process of food and non-food retail concentration. Non-food retail stores tend to concentrate in easily-accessible larger municipalities with central positions in a region. On the other hand, this region does not clearly reflect global trends of food-retail concentration. Specifically, a process of deconcentration (or atomisation) of the food-retail network is found. In 1996, as many as 429 food stores were registered in 100 municipalities, while 472 non-food stores were located in 47 municipalities. Until 2012, the food retail business was deconcentrated into 189 municipalities and the number of food stores grew to 572. In the non-food retail network, an inverse process of concentration can be detected as the number of municipalities with non-food stores dropped to 38 while the number of non-food stores increased to 654.

The growth of food-retail network capacity in rural environments probably stems from consumption growth in the region, in spite of increasing outshopping habits. This might be inspiring for forthcoming research to focus on an analysis of the rural consumer behaviour factors sustaining the outshopping (see e.g. Broadbridge, Calderwood, 2002; Patel et al., 2015) and inshopping trends (Mullis, Kim, 2011), respectively.

RQ2: The food-retail network shows some signs of growth. In spite of the fact that Slovakia's retail sector faces some general globalisation trends, and a booming large-scale store network at the expense of small ones (see Križan et al., 2016), rural areas tend to copy these trends at a smaller and delayed scale. In general, retail networks in rural environments have not witnessed a decline yet, but we should emphasize that the intensity of modifications depends on size of a given community and its proximity to the nearest urban area. In rural environments, any transformations related to the retail sector happen at a slower pace (more considerable changes concern residential areas), while in small and medium-sized towns they result mainly from the expansion of grocery supermarket chains (Heffner, Twardzik, 2015: 96). Retail business development in rural communities depends predominantly on consumer loyalty which manifests itself in three basic dimensions: rational, quality, and hard-core loyalty (Khare et al., 2014).

With respect to what has been written above, loss of retail culture might be discussed here (Jürgens, 2014). According to Jussila et al. (1992), shopkeepers in a recessionary environment either adapt to prevailing market conditions without essential structural change or develop additional business functions. The first choice may bring a focus on the profitable aspects of retailing or by giving up investing and preparing for closure. The second choice (typical for remote and sparsely populated environments) would be to combine retail with other personal services. The third strategy is expansion, which mostly applies to busy tourist centres.

RQ3: Certain food-retail deconcentration trends appear in urban environments, which leads to the formation of retail-surplus areas in the hinterlands of urban centres. However, this hypothesis has not been confirmed in the surveyed region. This is partly due to the fact that the Gemer region lacks a powerful regional urban metropole which would encourage processes found in such places with evident suburbanisation trends (see Šveda, Križan, 2012; Clapson, 2003).

RQ4: As for food-retail networks, the rural environment is dominated by communities with food-retail deficits. The number of food-retail deficit communities has grown but communities with a food-retail surplus are still dominant. Food-retail deficit municipalities in the Gemer region usually correspond to those facing severe depopulation (cf. Bleha et al., 2014), often followed by a general retail decay. Considering the low consumer potential, these retail units are not competitive with the large-scale units in neighbouring towns and thus leads to their closure (Kulle, 1997). However, it should be emphasized that in the case of retail-deficit municipalities or communities with no food-retail store, periodic markets might play an important substitute role (cf. Kumar Velayudhan, 2014).

The location of retail food markets is usually based on segmentation, but might unintentionally (although perhaps not unanticipated) result in 'food desert' formation in poorer areas. From our point of view, municipalities with no stores or food-store deficit municipalities can be considered as food deserts which may raise methodological questions. We admit that the food desert concept is essentially based on the accessibility of (selected types of) retail stores on one side and the location of socio-economic groups on the other (Raja et al., 2008; Smith, Morton, 2009). However, the proportion of food-stores related to population or the regional average has not been a subject of profound research so far. The surveyed region shows a positive trend of a decreasing number of municipalities without food stores which can be defined as food deserts (cf. Bilková, Križan, 2015; Bilková et al., 2017). On the other hand, the growing number of food-retail deficit municipalities may be perceived as harmful and contradictory to the trend of increasing consumption following global trends. This contradiction apparently brings challenges for planners and those in marketing.

In conclusion, the findings of the study suggest that rural food and non-food retailing has gone through considerable change. Surprisingly, these changes are not in harmony with the globalisation processes visible in urban environments. Specifically, retail capacities (both food and non-food) in the Gemer region are witnessing a process of growth.

7. Limitations and suggestions for future research

A certain generalization in the analysis limits the interpretation of the results. The Gemer region is highly specific in both economic and social aspects. Thus, future research should be conducted to confirm trends found in other regions, which might help understand the processes of food and non-food retailing in less developed regions in general. On the other hand, broad changes that have defined retail restructuring are probably secondary to the host of other problems these remote regions often face (Vias, 2004). The issues of the retail sector, and the transformation of services and their impact on consumer well-being, are also challenges for future detailed research.

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